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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,260	04/14/2006	Takao Inoue	062362	8862

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EXAMINER	
LE, SANDRA M	

ART UNIT	PAPER NUMBER
4128	

MAIL DATE	DELIVERY MODE
12/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/576,260	INOUE ET AL.	
	Examiner	Art Unit	
	Sandra Le	4128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6 and 8-11* is/are pending in the application.

4a) Of the above claim(s) *2,5,7* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/14/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Summary

1. This is the initial Office Action based on Application No. 10/576,260 filed on April 14, 2006.

2. Claims 1, 3-4, 6, 8-11 are currently pending and have been fully considered.

3. Claims 2, 5, 7 are cancelled from further consideration.

Priority

4. Acknowledgement is made of applicant's claim for foreign priority based on an application filed in Japan on October 17, 2003. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1, 3, 6, 8, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over MISHIMA et al. (US 5,514,496).

With respect to Claim 1, MISHIMA et al. at col. 1, lines 64-66 teaches a nonaqueous electrolyte battery comprising a positive electrode active material, a negative electrode action material, and a nonaqueous electrolyte. MISHIMA et al. additionally teaches an electrode material mixture comprising electrode active material and a conducting agent (col. 6, lines 62-66) wherein said conducting agent includes carbon black (col. 6, line 67, col. 7, line 2), and said positive electrode active material has a specific surface area of from 0.1 to 20 m^2/g (col. 5, lines 27-29). Furthermore, MISHIMA et al. teaches said electrolyte may including a nitride (col. 8, lines 53-54), and said positive electrode active material has an average particle diameter of from 0.1 to 50 μm (col. 5, lines 51-3). MISHIMA et al. does not specifically teach the carbon black specific surface area nor the nitride average particle diameter. However, it would have been obvious to provide carbon black and a nitride having the respective surface area and particle diameter as the electrode active material in order to promote even mixing.

With respect to Claim 3, MISHIMA et al. at col. 8, lines 53-54 teaches a solid electrolyte battery including a lithium nitride, a metal nitride.

With respect to Claim 6, MISHIMA et al. at col. 1, lines 64-66 teaches a nonaqueous electrolyte battery comprising a positive electrode active material, a

negative electrode action material, and a nonaqueous electrolyte. MISHIMA et al. additionally teaches an electrode material mixture comprising electrode active material and a conducting agent (col. 6, lines 62-66) wherein said conducting agent includes carbon black (col. 6, line 67, col. 7, line 2). Furthermore, MISHIMA et al. teaches a solid electrolyte including a nitride (col. 8, lines 53-54), and said positive electrode active material has an average particle diameter of from 0.1 to 50 μm (col. 5, lines 51-3). It would have been obvious to provide carbon black and a nitride having the same average particle diameter as the electrode active material in order to evenly disperse or mix the nitride and positive electrode active material.

With respect to Claim 8, MISHIMA et al. at col. 8, lines 53-54 teaches a solid electrolyte battery including a lithium nitride, a metal nitride.

With respect to Claim 10, MISHIMA et al. teaches an electrode material mixture for a nonaqueous electrolyte battery comprising electrode active material and a conducting agent (col. 6, lines 62-66) wherein said conducting agent includes carbon black (col. 6, line 67, col. 7, line 2), and said positive electrode active material has a specific surface area of from 0.1 to 20 m^2/g (col. 5, lines 27-29). It would have been obvious to provide carbon black having the same surface area in order to evenly disperse or mix the carbon black and electrode active material.

8. Claims 4, 9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over MISHIMA et al. (US 5,514,496) in view of NUMATA et al. (US 2003/0082453 A1).

With respect to Claim 4, MISHIMA et al. teaches all of the claim limitations of Claims 1 and 3, but fails to teach a metal nitride including zirconium nitride. NUMATA et al. at paragraph 16-18 teaches a nonaqueous electrolyte battery comprising a nitride wherein said nitride includes zirconium nitride. At the time of invention, one of ordinary skill in the art would have been motivated to modify the battery component of MISHIMA et al. with the zirconium nitride teaching of NUMATA et al. because zirconium nitrides are chemically stable and heat generation due to oxidation and damage due to high voltage hardly occur, making zirconium nitride excellent in chemical stability at a high temperature and therefore preferable as an electrode material, as taught by NUMATA et al. at paragraph 36.

With respect to Claim 9, MISHIMA et al. teaches all of the claim limitations of Claim 6, but fails to teach a metal nitride including zirconium nitride. NUMATA et al. at paragraph 16-18 teaches a nonaqueous electrolyte battery comprising a nitride wherein said nitride includes zirconium nitride. At the time of invention, one of ordinary skill in the art would have been motivated to modify the battery component of MISHIMA et al. with the zirconium nitride teaching of NUMATA et al. because zirconium nitrides are chemically stable and heat generation due to oxidation and damage due to high voltage hardly occur, making zirconium nitride excellent in chemical stability at a high temperature and therefore preferable as an electrode material, as taught by NUMATA et al. at paragraph 36.

With respect to Claim 11, MISHIMA et al. at col. 1, lines 64-66 teaches a nonaqueous electrolyte battery comprising a positive electrode active material, a

negative electrode action material, and a nonaqueous electrolyte. MISHIMA et al. additionally teaches an electrode material mixture comprising electrode active material and a conducting agent (col. 6, lines 62-66) wherein said conducting agent includes carbon black (col. 6, line 67, col. 7, line 2), and said positive electrode active material has a specific surface area of from 0.1 to 20 m^2/g (col. 5, lines 27-29). Furthermore, MISHIMA et al. teaches a solid electrolyte including a nitride (col. 8, lines 53-54), and said positive electrode active material has an average particle diameter of from 0.1 to 50 μm (col. 5, lines 51-3). However, MISHIMA et al. fails to teach a metal nitride including zirconium nitride. NUMATA et al. at paragraph 16-18 teaches a nonaqueous electrolyte battery comprising a nitride wherein said nitride includes zirconium nitride. At the time of invention, one of ordinary skill in the art would have been motivated to modify the battery component of MISHIMA et al. with the zirconium nitride teaching of NUMATA et al. because zirconium nitrides are chemically stable and heat generation due to oxidation and damage due to high voltage hardly occur, making zirconium nitride excellent in chemical stability at a high temperature and therefore preferable as an electrode material, as taught by NUMATA et al. at paragraph 36. Therefore the claimed invention is obvious because the claimed battery comprises the same components disclosed by MISHIMA et al. and NUMATA et al. within the specific surface area and average particle diameter ranges disclosed by MISHIMA et al.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra Le whose telephone number is 571-270-5121. The examiner can normally be reached on Monday through Friday, 8:00am-5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Barbara Gilliam can be reached on 571-272-1330. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SL

/Barbara L. Gilliam/
Supervisory Patent Examiner, Art Unit 4128